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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,307	09/23/2003	Chia-Liang Lin	AVAN 2755	4680

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EXAMINER	
JEANGLAUDE, JEAN BRUNER	
ART UNIT	PAPER NUMBER
2819	

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/669,307	LIN, CHIA-LIANG	
	Examiner	Art Unit	
	Jean B Jeanglaude	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,16-19 and 27* is/are rejected.

7)☒ Claim(s) *8-15,20-26 and 28-33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *09-23-03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17, 18 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 – 7, 16 – 19, 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Galton (US Patent Number 5,684,482).

3. Regarding claims 1, 16 - 19, Galton discloses a dynamic encoder and method (fig. 2) for generating an N-bit encoder output word in response to each encoder input word of a sequence of encoder input words, where each encoder input word may represent any of N+1 different levels, where N is an integer greater than 4, the dynamic encoder (fig. 2) comprising: a plurality of switching blocks (121 – 126, fig. 2) organized into a tree comprising at least a highest layer (layer 3 represents the highest layer) and a lowest layer (layer 1 represents the lowest layer) of switching blocks (note the layers

in fig. 2), wherein each switching block (121 – 126) receives a block input word (142, 143, 148 - 151, fig. 2) and converts it into R block output words (144 – 147, 152 – 159, fig. 2), each of the R block output words having fewer bits than the block input word, such that a sum of values of the R block output words equals a value of the block input word (fig. 2) , and such that when the value of the block input word is other than a multiple of R, a value of each one of its R block output words is other than solely a function of the value of the block input word (fig. 2) , wherein the highest layer (layer 3 is the highest layer) of the tree includes a switching block (121, fig. 2 for instance) receiving each successive encoder input word of the sequence as its block input word, wherein each switching block of each layer of the tree other than the lowest layer (layer 1) supplies each of its R block output words as a block input word to a separate switching block (121, 122, fig. 2) of a next lower layer of the tree (fig. 2) , wherein each block output word (152 – 159, fig. 2) of each switching block of the lowest layer of the tree consists of a single bit and forms a separate bit of the N-bit encoder output word, wherein for at least one of the plurality of switching blocks R >2 (fig. 2).

4. Regarding claim 2, Galton discloses a dynamic encoder (fig. 2) wherein for every switching block (121 – 126) of every layer of the tree other than the highest layer of the tree R > 2 (the output 144 – 147, 152 – 159).

5. Regarding claim 3, Galton discloses a dynamic encoder (fig. 2), wherein for at least one of the switching blocks R = 4 (the second switch block 121, 122) [fig. 2].

6. Regarding claim 4, Galton discloses a dynamic encoder (fig. 2) wherein for every switching block R = 4 (the second switch block 121, 122) [fig. 2].

7. Regarding claim 5, Galton discloses a dynamic encoder (fig. 2) wherein for at least one switching block R has a different value than for at least one other switching block (fig. 2; paragraph bridging col 5 and 6).

8. Regarding claim 6, Galton discloses a dynamic encoder (fig. 2) wherein for at least one switching block R is other than a power of 2 (for the switch 120, R = 2, R has a power of 1).

9. Regarding claim 7, Galton discloses a dynamic encoder (fig. 2) wherein N is a power of two other than a power of four (for the switches 121, 122 R = 4, thereby R has a power of 2), and wherein for every switching block of every layer of the tree other than the highest layer of the tree R = 4 (fig. 2).

10. Regarding claim 27, Galton discloses a dynamic encoder (fig. 2) for generating an N-bit encoder output word in response to each encoder input word of a sequence of encoder input words, where each encoder input word may represent any of N+1 different levels, where N is an integer greater than 4, the dynamic encoder (fig. 2) comprising: a plurality of switching blocks (121 – 126, fig. 2) organized into a tree comprising at least a highest layer and a lowest layer of switching blocks (note the layers in fig. 2), wherein each switching block (121 – 126) receives a block input word (142, 143, 148 - 151, fig. 2) and converts it into R block output words (144 – 147, 152 – 159, fig. 2), each of the R block output words having fewer bits than the block input word, such that a sum of values of the R block output words equals a value of the block input word (fig. 2) , and such that when the value of the block input word is other than a multiple of R, a value of each one of its R block output words is other than solely a

function of the value of the block input word (fig. 2) , wherein the highest layer (120 constitutes the highest layer) of the tree includes a switching block (121, fig. 2 for instance) receiving each successive encoder input word of the sequence as its block input word, wherein each switching block of each layer of the tree other than the lowest layer supplies each of its R block output words as a block input word to a separate switching block (121, 122, fig. 2) of a next lower layer of the tree (fig. 2) , wherein each block output word (152 – 159, fig. 2) of each switching block of the lowest layer of the tree consists of a single bit and forms a separate bit of the N-bit encoder output word, wherein for at least one of the plurality of switching blocks R >2 (fig. 2); a plurality of 1-bit DACS (130 – 137, fig. 2) for converting the signal bit output words of switching blocks of the lowest layer of the tree into a plurality of analog signals; and a summer (169) for summing the plurality of analog signals to produce the analog DAC output signal (col 6, lines 3 – 24).

Allowable Subject Matter

Claims 8 – 15, 20 – 26, 28 - 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for allowing the aforementioned claims will be provided in the next office action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B Jeanglaude whose telephone number is 571-

272-1804. The examiner can normally be reached on Monday - Friday 7:30 A. M. - 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jean Bruner Jeanglaude
Primary Examiner
June 1, 2004